IN THE CLAIMS

Claim 1-6. (canceled)

Claim 7. (previously presented) An electrode comprising a mediator, said mediator comprising a quinone molecule derivative, wherein the mediator is immobilized and the mediator mediates electron transfer between at least one enzyme and an electrode.

Claim 8. (previously presented) An electrode according to claim 7, wherein the at least one enzyme is immobilized.

Claim 9. (previously presented) An electrode according to claim 8, wherein the at least one immobilized enzyme is diaphorase.

Claim 10. (previously presented) An electrode according to claim 8 comprising at least two immobilized enzymes, wherein the at least two immobilized enzymes are diaphorase and dehydrogenase.

Claim 11. (original) An electrode according to claim 10, wherein the dehydrogenase is glucose dehydrogenase.

Claim 12. (**Currently amended**) An electrode according to claim 10 or 11**, further** comprising **immobilized co-enzyme** ~~**at least three immobilized enzymes, wherein the third immobilized enzyme is**~~ NADH.

Claim 13. (original) An electrode according to claim 8 comprising the mediator and the enzyme immobilized on the electrode by a polymer and a crosslinking agent.

Claim 14. (original) An electrode according to claim 13, wherein the polymer is polyvinylimidazole.

Claim 15. (original) An electrode according to claim 13 or 14, wherein the crosslinking agent is polyethylene glycol diglycidyl ether (PEGDGE).

Claim 16. (**withdrawn**) An electrode according to claim 7, further comprising an oxygen separation membrane arranged in a vicinity of the mediator.

Claim 17. (original) An electrode according to claim 7, used for one of a biofuel cell and a biosensor.

Claim 18-21. (canceled)

Claim 22 (previously presented) The electrode according to claim 7 wherein the quinone molecule derivative is a naphthoquinone molecule derivative.

Claim 23. (previously presented) The electrode according to claim 22 wherein the naphthoquinone molecule derivative is at least one naphthoquinone molecule chosen from the group consisting of a sodium anthraquinone-2-sulfonate (AQS) derivative and a 2-methyl-1,4-naphthoquionone (VK3) derivative.

Claim 24. (previously presented) The electrode according to claim 22, wherein the naphthoquinone molecule derivative is a 2-methyl-1,4-naphthoquinone (VK3) derivative.

Claim 25. (previously presented) The electrode according to claim 24, wherein the 2-methyl-1,4-naphthoquinone (VK3) derivative is 2-methyl-1,4-naphthoquinone (VK3) modified

with at least one functional group, wherein the at least one functional group is capable of bonding with a polymer or an enzyme.

Claim 26. (previously presented) The electrode according to claim 25, wherein the at least one functional group is selected from the group consisting of an amino group, a carboxyl group, a chloroformyl group, a succinimide oxycarbonyl group, an alkyl metal sulfosuccinimide oxycarbonyl group, a pentafluorophenyl oxycarbonyl group, a p-nitrophenyl oxycarbonyl group, a hydroxyl group, a formyl group, a halogen group, a maleimide group, an isothiocyanate group, and an oxiranyl group.

Claim 27. (previously presented) The electrode according to claim 26, wherein the 2-methyl-1,4-naphthoquinone (VK3) derivative is modified with the at least one functional group at a 2-position and/or a 3-position of the naphthoquinone.

Claim 28. (previously presented) The electrode according to claim 27, wherein the 2-methyl-1,4-naphthoquinone (VK3) derivative is a 3-methyl-1,4-naphthoquinone modified with the at least one functional group at the 2-position of the naphthoquinone.

Claim 29. (previously presented) The electrode according to claim 28, further comprised of a spacer molecule between the functional group and the 2-position of the naphthoquinone.

Claim 30. (previously presented) The electrode according to claim 29, wherein the spacer molecule is selected from the group consisting of a hydrocarbon linear chain, a polyoxyethylene linear chain, a polyethylene glycol chain, and a polypropylene glycol chain.

Claim 31. (previously presented) The electrode according to claim 30, wherein the spacer molecule is a hydrocarbon linear chain alkyl group.

Claim 32. (previously presented) The electrode according to claim 25, wherein the 2-methyl-1,4-naphthoquinone (VK3) derivative is one or more kinds of a quinone molecule selected from the group consisting of 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone (CPVK3) represented by the following formula (1), 2-{3-[N-(2-aminoethyl)aminocarbonyl]propyl}-3-methyl-1,4-naphthoquinone (AEACPVK3) represented by the following formula (2), and 2-(3-aminopropyl)-3-methyl-1,4-naphthoquinone (APVK3) represented by the following formula (3).

Claim 33. (previously presented) The electrode according to claim 32, wherein the 2-methyl-1,4-naphthoquinone (VK3) derivative is 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone (CPVK3) represented by the following formula (1).

Claim 34. (**withdrawn**) An electrode apparatus comprising

an electrode with an electrode surface;

a mediator comprising 2-(3-carboxypropyl)-3-methyl-1,4-naphthoquinone (CPVK3);

an oxygen separation membrane;

a diaphorase enzyme,

a dehydrogenase enzyme; and

a nicotinamide adenine dinucleotide molecule;

wherein the mediator, the diaphorase enzyme, and the dehydrogenase enzyme are each immobilized on the electrode surface by a polyvinylimidazole polymer and a polyethylene glycol diglycidyl ether crosslinking agent;

wherein the oxygen separation membrane is arranged in a vicinity of the immobilized mediator;

wherein the diaphorase enzyme is immobilized on the electrode, the nicotinamide adenine dinucleotide molecule is immobilized on the electrode, and the dehydrogenase enzyme is immobilized on the electrode surface;

wherein the immobilized dehydrogenase enzyme can catalyze electron transfer between a biofuel and an oxidized form of the immobilized nicotinamide adenine dinucleotide molecule to form a reduced form of the immobilized nicotinamide adenine dinucleotide molecule;

wherein the immobilized diaphorase enzyme can catalyze electron transfer between the reduced form of the immobilized nicotinamide adenine dinucleotide molecule and the immobilized mediator; and

wherein the immobilized mediator mediates electron transfer between the immobilized diaphorase enzyme and the electrode.